REMARKS

Claims 1-4 have been cancelled and new claims 5-25 have been added. Claims 5-25 are currently pending in the application. All pending claims are set forth in Exhibit B with amendments shown (if applicable).

Attorney for Applicants gratefully acknowledges the interview with the Examiner on 12 July 2002 in which the rejections and the subject matter sought to be covered by the proposed new claims were discussed. The new claims have been submitted to more clearly describe Applicants' invention and to overcome rejections based on 35 U.S.C. 112 second paragraph.

As explained in the interview, the amendments to the specification are for the purpose of expressly incorporating passages from the parent application USSN 09/698,846 that were incorporated by reference in the instant application (page 1, lines 7-8). The passages inserted at page 4, line 10, were amended as indicated in Exhibit A to corrected typographical errors. Further corrections to the figure captions for Figures 4, 33, and 34 have been made to correct typographical errors.

In regard to the new claims, where basis for a term or phrase is found in the incorporated passages, the page and line numbers refer to the location in the parent application 09/698,846. (Such page and line references have the designation "('846)" in the right hand side of the box below).

Basis for the new claims are as follows:

New Claim(s)	Term/Phrase	Basis
5	"antibody binding compound having one or more eTag reporters attached"	Page 29, line 44, to page 30, line 6. Page 18, lines 7-8. ('846)
5, 13, 19	"$[(D, M)\text{-}L]_k\text{-}T$"	Claim 1 Page 29, line 44, to page 30, line 6.
13, 19	"k ... 1 to 20"	Page 29, line 44, to page 30, line 6. Page 33, Table 4.
5, 19	"antibody binding compound"	Page 4, lines 36-38. Page 13, lines 31-43. Page 33, Table 4. Page 8, line 15. ('846)
5, 19	"cleavable linkage"	Claim 1 Page 20, line 8, to page 22, line 27. ('846)
5, 19	"eTag reporters from different electrophoretic probes form distinct peaks upon electrophoretic separation" OR "distinct charge/mass ratio so that eTag reporters of the plurality of electrophoretic probes form distinct peaks upon electrophoretic	Claim 1 Page 4, lines 31-35. Figs. 5, 6, & 8 Page 8, lines 12-13. ('846) Figs. 7 ('846)

	separation."	
6	"capture agent"	Claims 1-3. Page 4, lines 12-13, & lines 23-26. Page 4, lines 36-40. Page 30, line 27, to page 31, line 8. Page 34, lines 10-15.
7	"cleaving agent"	
8	"capture agent comprises a solid support"	Page 30, line 27, to page 31, line 8. Page 34, lines 10-15. Page 17, lines 13-29. ('846)
8	" capture agent comprises a solid support having attached thereto antibody or antibody fragments that bind specifically to said one or more target compounds"	Claim 3 Page 30, line 27, to page 31, line 8. Page 34, lines 10-15. Page 17, lines 13-29. ('846) Page 18, lines 10-14. ('846) Page 19, lines 27-29. ('846)
9	"cleaving agent is an enzyme"	Page 19, lines 5-10. ('846)
10	"cleaving agent generates an active species for cleaving said cleavable linkage"	Page 18, line 16, to page 19, line 3. ('846)
11	"cleaving agent is a sensitizer and said active species is singlet oxygen or hydrogen peroxide"	Page 18, line 16, to page 19, line 3. ('846)
12, 19	"second antibody binding compound having a sensitizer for generating an active species "	Page 33, Table 4. Claim 37, 38, & 47. ('846) Page 18, line 16, to page 19, line 3. ('846)
13, 19	"1 to 500 atoms" in reference to M	Page 17, line 11.
13, 19	"group consisting of carbon, hydrogen, oxygen, nitrogen, sulfur, phosphorus, and boron"	Page 17, lines 14-15. Figs. 1C, 5, 6, 15, 17A-J.
14, 20	"1 to 300 atoms" in reference to M	Page 17, line 11.
14	"plurality is in the range of from 5 to 100" in reference to the number of electrophoretic probes.	Page 29, lines 22-24.
15, 21	"cleavable linkages are each an olefin, a thioether, a sulfoxide, or a selenium analog of the thioether or sulfoxide"	Page 19, line 11. ('846) Pages 21-22. ('846)
17	"k is in the range of from 1 to 3"	Page 30, line 6.
17, 24	"antibody binding compound is a monoclonal antibody or a polyclonal antibody"	Page 13, lines 31-43.
19	"reagent pairs"	Page 18, lines 21-22. ('846)
19	"first reagent"	Page 18, lines 21-22. ('846)
19	"second reagent"	Page 18, lines 21-22. ('846)
11, 24	"active species is singlet oxygen or hydrogen peroxide"	Page 18, line 16, to page 17, line 3. ('846)
25	"sensitizer is capable of generating singlet oxygen when photoactivated"	Page 18, line 16, to page 17, line 3. ('846)

In regard to the above terms, it would be clear to one of ordinary skill in the art that an antibody binding compound may include one or more antibodies or components derived from antibodies, such as Fab fragments, or the like, or other ancillary components, such as biotins or streptavidin,

or like components commonly used in the immunoassay art. Likewise, one of ordinary skill in the art would recognize that the distinctness of an electrophoretic peak could be based on either electrophoretic mobility or fluorescence, as disclosed on page 15, line 28, to page 16, line 2, of parent application 09/698,846.

No new matter has been added by the amendments. Reconsideration is respectfully requested.

Provisional Double Patenting

The Examiner provisionally rejected claims 1-4 under the doctrine of obviousness-type double patenting with respect to the following claims of the following copending applications:

Claims	Ser. No. of Copending Application
1-9	09/825,245
1-5	09/825,246
1-3 and 5-7	09/824,905
1-4	09/824,861

In view of the above amendments, Applicants respectfully disagree with the above rejection as it applies to copending applications 09/825,245; 09/825,246; and 09/824,905, as the subject matter of these applications is directed to oligonucleotide binding compounds that bind to polynucleotide targets, whereas the subject matter of the present application is directed to antibody binding compounds. Applicants submit that the binding events of the respective methods operate by different mechanisms and that the knowledge of one method by one of ordinary skill in the art would not render the other method and materials obvious.

Applicants have enclosed appropriate Terminal Disclaimers with respect to the above copending applications to overcome the above rejections. Accordingly, Applicants respectfully request that the above rejections be withdrawn.

Rejections Under 35 U.S.C. 112

The Examiner rejected claims 1-4 under 35 U.S.C. 112 second paragraph because of the use of various vague and indefinite terms.

Applicants respectfully disagree with this rejection, particularly in view of the above amendments. Claims 1-4 have been canceled and new claims 5-25 have either removed the offending terms or have further clarified the terms to remove any vagueness or indefiniteness. Accordingly, Applicants request that the rejections by withdrawn.

Rejection Under 35 U.S.C. 102

The Examiner rejected claim 1 under 35 U.S.C. 102(b) as being anticipated by Grossman (5,470,705). The Examiner argues that Grossman discloses all the elements of Applicants' composition, including a binding polymer (presumably the rough equivalent of Applicants' "antibody binding compound"), a mobility modifying polymer chain (presumably the rough equivalent of Applicants' "eTag reporter"), and a detection moiety.

Applicants respectfully disagree, particularly in view of the amendments. The binding polymer of Grossman is limited to oligonucleotides or related analogs that bind to a target polynucleotide by hybridization (col. 6, line 56, to col. 7, line 30), and there is no disclosure or suggestion in Grossman of any other class of binding compounds. The "binding" elements of Applicants' composition are "antibody binding compounds" that are not related to oligonucleotides structurally, in the manner in which they are made, or in how they bind to their target compounds. Applicants' "antibody binding compound" element is not disclosed by Grossman. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. 102(b) be withdrawn.

Rejections Under 35 U.S.C. 103

The Examiner rejected claims 2-3 under 35 U.S.C. 103(a) as being unpatentable over Grossman (5,470,705) in view of Babon (5,851,770). The Examiner applies Grossman as described above. Babon discloses use of a capture ligand, such as biotin, to capture on a solid phase support various hetero- and homoduplexes that may or may not contain mismatched basepairs. Captured duplexes are treated with a mismatch-recognizing nuclease that cleaves the captured sequences at mismatch locations to release fragments which are then analyzed by electrophoresis. The Examiner argues that it would be obvious to one of ordinary skill to modify the probes of Grossman to include the capture ligands of Babon, thereby obtaining Applicants' invention. One of ordinary skill would be motivated to make such a combination because of the advantages of being able to wash away unbound probe in the solid phase system disclosed by Babon.

Applicants respectfully disagree, particularly in view of the above amendments. First, Applicants' invention employs antibody binding compounds rather than oligonucleotide probes (as disclosed by Grossman) or oligonucleotide primers (as disclosed by Babon). Babon attaches a capture agent to a nucleic acid analyte by PCR amplification using a primer with a capture agent attached, e.g. biotin. The same approach cannot be used in Applicants' invention because the analytes are generally not nucleic acids and cannot be amplified in the manner disclosed by Babon.

Second, to the extent that either reference teaches or suggests the cleavage of an electrophoretic tag, at most, Grossman suggests cleavage with a nuclease that can only operate on nucleic acid substrates. Again, neither reference discloses or suggests any method cleaving that would work with Applicants' invention. Applicants submit that their invention could not be obtained from the teachings of Grossman in view of Babon without independent invention. Accordingly, Applicants respectfully request that the above rejection be withdrawn.

In view of the above, Applicants submit that the claims as written fully satisfy the requirements of Title 35 of the U.S. Code, and respectfully request that the rejections thereunder be withdrawn and that the claims be allowed and the application quickly passed to issue.

If any additional time extensions are required, such time extensions are hereby requested. If any additional fees not submitted with this response are required, please take such fees from deposit account **50-2266**.

Respectfully submitted,

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Enclosures:

Terminal Disclaimers for USSNs: 09/824,905; 09/825,245; 09/825,246; and 09/824,861.
Petition for Time Extension
CPA Request Transmittal form PTO/SB/29
Supplemental Information Disclosure Statement with cited references